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Health Risk Behaviors in Rural Adolescents at Two High Schools Located in One Kentucky County

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HEALTH RISK BEHAVIORS IN RURAL ADOLESCENTS
AT TWO HIGH SCHOOLS LOCATED IN ONE KENTUCKY COUNTY

A Thesis

Presented to

the Faculty of the Department of Nursing

Western Kentucky University

Bowling Green, Kentucky

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Nursing

by

Melinda Elizabeth Hann

June 1997

HEALTH RISK BEHAVIORS IN RURAL ADOLESCENTS
AT TWO HIGH SCHOOLS LOCATED IN ONE KENTUCKY COUNTY

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HEALTH RISK BEHAVIORS IN RURAL ADOLESCENTS
AT TWO HIGH SCHOOLS LOCATED IN ONE KENTUCKY COUNTY

Melinda Elizabeth Hann June, 1997 88 Pages

Directed by: Mary E. Hazzard, Ph.D., Kay Carr, Ed.D, and Susan Jones, M.S.N.

Department of Nursing Western Kentucky University

Many adolescents throughout the United States practice health risk behaviors that place them at risk for serious health problems. Despite the high incidence of reported adolescent health risk behaviors, no reports have been published to document the current risk to rural adolescents in individual counties of Kentucky. The purpose of this retrospective descriptive study was to identify the health risk behaviors of rural adolescents from two high schools in one county in Kentucky and to compare the two schools to determine if the health risk behaviors of these students were the same or different. The study was accomplished through analysis of data provided by Western Kentucky University and the University of Kentucky from Youth Risk Behavior Survey results of 151 ninth grade students from two high schools in one county in Kentucky. Students who had documented parent consent and student assent were eligible to complete the survey ($N=173$). The eligible students represented 24.8% of the ninth grade population from the two high schools combined. From these 173 students, 87.3% actually completed the surveys ($N=151$). Students were grouped according to the

school they attended. Among these were 96 students from school x ($n = 96$) and 55 students from school y ($n = 55$). Descriptive statistical methods were used to determine the frequencies of health risk behaviors of adolescents attending each of the two respective high schools in one county in Kentucky and for the two high schools combined to represent the county. T test for independent samples and Mann-Whitney U test were used to determine the difference in health risk behaviors between those students attending school x and those students attending school y. The results of this study indicated that differences in health risk behaviors for these two respective high schools were statistically significant ($p < .05$) for some variables (rarely used a safety belt, carried a weapon during the 30 days preceding the survey, ever had sexual intercourse, not used a condom at last sexual intercourse, and eaten > 2 servings cookies, donuts, pies the day preceding the survey) and not statistically significant for other variables (ridden with a driver who had been drinking alcohol, drunk alcohol during the 30 days preceding the survey, used marijuana during the 30 days preceding the survey, attempted suicide during the 12 months preceding the survey, ever injected an illegal drug, smoked cigarettes during the 30 days preceding the survey, and eaten > 2 servings french fries or potato chips the day preceding the survey). The suggestion is that some health risk behaviors were different for students attending school x and those students attending school y.

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CHAPTER 1

Introduction

Introduction

After working with a National Institute of Health (NIH) grant research project entitled “Empowering Rural Adolescents in Risk Reduction,” interest developed in health risk behaviors for the rural adolescent population specific to one Kentucky county. The NIH research project, which began in September of 1996, is a 36-month study that will develop, implement and evaluate a participatory nursing research and education program to reduce injuries and illnesses among adolescents in one rural Kentucky county.

Adolescence is a time when teenagers are exposed to a variety of influences that will shape their present and later health behaviors. Adolescence can also be an ideal time to intervene to shape their health behaviors (Office of Technology Assessment, 1991; Department of Health and Human Services, 1990). Programs to promote adolescent health are generally focused on urban and suburban populations, thus possibly placing rural adolescents at increased health risk. Because they lack access to preventive and treatment services, rural adolescents may be at increased risk for long-term

disabilities and illnesses (National Institute of Nursing Research, 1993).

Among adolescent health risk behaviors are accidents, sexual activity, lack of physical activity, tobacco use, sun and tanning bed exposure, drug and alcohol use, suicide, and poor diet. The following health risks have been reported for adolescents:

- accidents

- 21.7% had rarely or never used a safety belt (Centers for Disease Control, 1996)

- 38.8% had ridden with a driver who had been drinking alcohol during the 30 days preceding the survey (Centers for Disease Control, 1996).

- 20% had carried a weapon during the 30 days preceding the survey (Centers for Disease Control, 1996).

- sexual activity

- 55% were sexually active and 32% reported having multiple partners (Kentucky Department of Education, 1990).

- 53.1% of high school students had had sexual intercourse (Centers for Disease Control, 1996).

- 45.6% of sexually active students had not used a condom at last sexual intercourse (Centers for Disease Control, 1996).

- physical activity

- 37% spent three or more hours a day watching television or playing video games and 67% did not participate in a physical education

program (Kentucky Department of Education, 1990).

- 25.4% had attended physical education class daily (Centers for Disease Control, 1996).
- tobacco use
 - one in five high school seniors in the U.S. reports daily tobacco use (Johnson et al., 1993).
 - 89% of long-term smokers begin smoking by age 18 (Torrens, et al., 1995).
 - Kentucky's rate of tobacco use is one of the highest in the nation. In the Barren River region of Kentucky, of which Warren County is a part, 31.5% of adults in 1991-1993 identified themselves as current smokers (Kentucky Department for Health Services, 1994).
 - 75% of Kentucky high school students surveyed in 1990 reported trying cigarettes at least once and 37% had smoked at least one cigarette in the preceding month (Kentucky Department of Education, 1990).
 - Noland et al. (1990) found that rural male youth in Kentucky had a higher rate of smokeless tobacco use than had been reported in any other state, and that tobacco use was greater in students, like many in Central Kentucky, who were involved in tobacco farming.
 - 34.8% of high school students had smoked cigarettes during the 30 days preceding the survey (Centers for Disease Control, 1996).

- sun exposure and tanning beds
 - rural adolescents, especially those who work on farms, are at risk for developing melanomas or basal skin cancer later in life, possibly due to prolonged sun exposure and use of tanning beds (Stagg & Tucker, 1995).
- drug and alcohol use
 - 83% reported using alcohol, and half reported using it within the previous month (Kentucky Department of Education, 1990).
 - 51.6% had drunk alcohol during the 30 days preceding the survey (Centers for Disease Control, 1996).
 - 25.3% had used marijuana during the 30 days preceding the survey (Centers for Disease Control, 1996).
 - 2.0% had injected an illegal drug (Centers for Disease Control, 1996).
- suicide
 - 8.7% had attempted suicide during the 12 months preceding the survey (Centers for Disease Control, 1996).
- poor diet
 - 39.5% had eaten more than two servings of foods typically high in fat content during the day preceding the survey (Centers for Disease Control, 1996).

Rural adolescents are likely to face a variety of behavioral risks, and reductions of such risks in this population would parallel several of the goals of the Healthy People

2000 initiatives (Department of Health and Human Services, 1991) of reducing both short-term and long-term risks to adolescents. Kentucky has been traditionally understudied and underserved and is therefore an ideal site for examining risks for rural adolescents (National Institute of Nursing Research, 1993). Kentucky is also one of the most rural states in the nation with half of the population living in rural areas. Therefore, a sample of rural adolescents can be easily identified. For purposes of this study, students from two specific high schools in one Kentucky county were surveyed and their identified health risk behaviors were compared.

Problem Statement

Despite the increased awareness of healthy lifestyles, adolescents are exposed to a variety of unhealthy influences that will shape their current and future health behaviors (Office of Technology Assessment, 1991; Department of Health and Human Services, 1991). Rural adolescents may be at particular risk for long-term disabilities because they lack access to preventive and treatment services, and because programs to promote adolescent health generally focus on urban and suburban populations (National Institute of Nursing Research, 1993). Additionally, adolescents are seen as generally healthy. As a result, relatively few activities have been directed towards their health needs (Cohen, 1992b). Most of the morbidity and mortality data on adolescents show that many of their problems are behaviorally-based (Office of Technology Assessment, 1991; Cohen, 1992b). Thus, prevention programs that focus on behavior choices that affect problems such as substance abuse (tobacco, drug and alcohol), suicide, sexual activity, lack of

physical activity, poor diet, and accidents can have a greater impact on morbidity and mortality than programs that focus on biologically-based problems (Cohen, 1992b).

There is a critical need to intervene and positively influence the health choices of rural adolescents to aid in preventing the development of certain illnesses and injuries. Adolescence can be the ideal time for such intervention (Office of Technology Assessment, 1991). The health risk behaviors present in this specific rural adolescent population must be identified.

Purpose

The purpose of this retrospective comparative descriptive study was to identify the health risk behaviors of rural adolescents from two high schools in one Kentucky county and to compare the two schools to determine if the health risk behaviors of these students were the same or different. This study was accomplished through the retrospective analysis of the health risk behaviors of ninth grade students from two rural county Kentucky high schools. This information was obtained from the 1995 version of the Youth Risk Behavior Survey (YRBS) administered March 1997 for the NIH grant research project entitled "Empowering Rural Adolescents in Risk Reduction."

Research Objectives

The objectives of this study were as follows:

1. to identify health risk behaviors common to adolescents

2. to describe the health risk behaviors of adolescents attending two rural high schools in one Kentucky county
3. to identify the relationship of health risk behaviors of students from school x and school y
4. to determine the difference between school x and school y regarding health risk behaviors in two rural high schools in one Kentucky county.

Framework

The conceptual framework for this study was based on a combination of theories that include Albert Bandura's theory of Social Learning, Martin Fishbein's theory of Reasoned Action, and Nola Pender's Health Promotion Model. The combination of these theories helps to explain why adolescents engage in health risk behaviors.

Albert Bandura documented that cognitive processes play an important role in both the acquisition and the retention of new behavior patterns. He found that transitory experiences leave lasting effects by being coded and retained in symbols for memory representation. He also found that acquisition of response information is a major aspect of learning and that much of human behavior is developed through modeling (Bandura, 1977).

Bandura's theory of Social Learning postulates the importance of cognitive processes in the changing of behavior (Marriner-Tomey, 1994). This theory stresses a special kind of discrimination learning called observational learning, or modeling, in

which a person acquires a response to a situation simply by watching others make the response. In looking specifically at adolescents, peers are very important and influential. Peers, especially peers who are powerful, popular, attractive, and react positively to the adolescent, provide an array of behaviors ripe for imitating, comparing, discarding, modifying, and combining (Morgan, King, & Robinson, 1979). If the child/adolescent sees that the model is rewarded for his or her actions, the child/adolescent will tend to copy the behavior (Schell & Hall, 1979).

Martin Fishbein's theory of Reasoned Action asserts that behavior is a function of personal attitudes and social norms (Marriner-Tomey, 1994). His theory is based on the assumption that human beings are usually quite rational and make systematic use of the information available to them. He does not believe that human social behavior is controlled by unconscious motives or overpowering desires, or that it can be characterized as capricious or thoughtless. He argued that people consider the implications of their actions before they decide to engage or not engage in a given behavior (Fishbein & Ajzen, 1980).

Fishbein explains that in order to predict a specific behavior, we should focus on the attitude toward the behavior (i.e., smoking, physical exercise, sexual activity). He explains that attitudes about specific behaviors depend on such factors as evaluations of the likely consequences of the behavior and social norms concerning the behavior (Morgan, King, & Robinson, 1979). He found that individuals will tend to perform a behavior when they evaluate it positively and when they believe that important others think they should perform it (Fishbein & Ajzen, 1980).

Nola Pender's Health Promotion Model explains disease prevention and behaviors for enhancing health. Pender describes health promoting behaviors as activities that are an integral part of an individual's life style. Health promoting behaviors can include activities such as nutritional eating practices, physical exercise, use of relaxation or stress management techniques, and the development of social support. Many times old patterns of behavior must be deleted and new health promoting behaviors must be learned in order to enhance health and well-being (Pender, 1987). Health promoting actions seek to sustain or increase personal well-being and self-actualization (Pender, 1984).

These three theories combined were used as a framework to explain the health risk behaviors of adolescents from two high schools in one Kentucky county. The YRBS was the tool used to assess the health risk behaviors of these adolescents. The YRBS is designed to monitor six categories of priority health risk behaviors among youth and young adults: behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behaviors, unhealthy dietary behaviors, and physical inactivity (Centers for Disease Control, 1993).

Definitions

Health risk behavior - is defined in this study as a behavior that contributes to the leading causes of mortality, morbidity, and social problems among youth and adults which are often established during youth, extend into adulthood, and are interrelated. Priority health-risk behaviors among youth and young adults include: unintentional and

intentional injuries, tobacco use, alcohol and other drug use, sexual behaviors, unhealthy dietary behaviors, and physical inactivity (Centers for Disease Control, 1996).

Rural adolescent - is defined in this study as an adolescent (in the ninth grade of high school) living in a rural or nonmetropolitan (nonmetro) area with a rural (nonmetro) background (Noland et al., 1990).

Youth Risk Behavior Survey - is defined in this study as a self administered questionnaire which covers knowledge about and attitudes toward a variety of risk factors. It measures self reported intentions to practice certain risky behaviors and also covers current practices by examining topics such as diet and exercise, alcohol, tobacco and marijuana use, sexual activity, intentional and unintentional injuries, suicide ideation and attempts, and seat belt and helmet use (Centers for Disease Control, 1993).

Assumptions

1. The YRBS is an appropriate method to use for assessing health risk behaviors of adolescents.
2. Reliability exists for obtaining the same results for each individual survey completed, as it is a self administered survey.
3. Reliability exists for obtaining the same results when different individuals interpret the survey.

Limitations

Limitations of control over type of data collected and method of data collection

were present, because this was a retrospective, comparative descriptive study of previously collected data. Conducting the research in only one county of Kentucky limits the generalizability of the findings. Due to the need for parent consent and student assent, a nonrandom sample of the entire ninth grade populations who gave both parent consent and student assent from the two high schools was used. The eligible students represented only 24.8% of the ninth grade population from the two high schools combined. The small sample size further limits the extent of generalization of findings.

CHAPTER 2

Literature Review

Introduction

The major concepts of this study are adolescent health risk behaviors and their impact on rural adolescents. The review of literature is presented including both theoretical and empirical information for these concepts. This literature review includes information predominantly from the past 7 years. After presentation of literature on these topics and the theoretical framework, the reviewed literature will be summarized.

Review of Relevant Theoretical and Empirical Literature

Adolescent Health Risk Behavior

Adolescent health has not been a national priority simply because adolescents are commonly regarded as among the healthiest of all Americans and thus are least in need of health services. However, adolescents do have health problems and often face formidable barriers in trying to obtain access to basic health care. Barriers that can interfere with the development of appropriate health promotion, problem prevention, treatment, and environmental support strategies for adolescents include the following: income, insurance, correct information, legal assistance, physical maturation, and social-psychological support (Office of Technology Assessment, 1991).

Because adolescents are seen as generally healthy, relatively few activities have been directed towards their health needs. Cohen (1992b) described adolescent health care in America as dysfunctional and in disarray. He described health approaches for adolescents who are considered dysfunctional to be narrow, usually categorical, and rarely comprehensive. The result is a hodgepodge based on the adult model of a “disease a month.” The adolescent disorder of the month (hot topic) may be drug abuse, suicide, or pregnancy. Adolescents have need for holistic, comprehensive health care much the same as adults do.

Most of the morbidity and mortality data for adolescents show that many of their problems are behaviorally rather than biologically based (Cohen, 1992b; Office of Technology Assessment, 1991). Therefore a preventative focus on behaviorally-based choices such as substance abuse (tobacco, drug and alcohol), suicide, sexual activity, lack of physical activity, poor diet, and accidents can have a greater impact on morbidity and mortality than programs that focus on biologically based problems (Cohen, 1992b). Because adolescence is a period when individuals form an identity and develop health habits that will affect their immediate and long-term health status (National Institute of Nursing Research, 1993; Office of Technology Assessment, 1991), these years can be the ideal time to positively influence health choices that will prevent certain illnesses, injuries, and long term disabilities (Office of Technology Assessment, 1991).

The Youth Risk Behavior Surveillance System (YRBSS) was developed by the Centers for Disease Control (CDC) and has been used since 1990 to monitor and improve national, state, and local policies and programs designed to reduce risks associated with

the leading causes of mortality and morbidity. The six categories of priority health-risk behaviors among youth and young adults include: behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behaviors, unhealthy dietary behaviors, and physical inactivity. The 1995 results (these are the most recent published results) for the United States revealed that 72% of all deaths among school-age youth and young adults resulted from four causes: motor vehicle crashes, other unintentional injuries, homicide, and suicide (Centers for Disease Control, 1996). The 1995 YRBS results suggest that many high school students practiced behaviors that may increase their likelihood of death from these four causes. Health risk behaviors associated with these four causes of death include: safety belt use, riding with a driver who had consumed alcohol, carrying a weapon, alcohol use, marijuana use, attempting suicide, sexual intercourse, condom use, illegal drug injection, cigarette smoking, eating foods high in fat content, and physical exercise (Centers for Disease Control, 1996). The 1995 U.S. health risk behavior survey results will be discussed further in the results section (Chapter 4).

Impact on Rural Adolescents

In the provision of health care services, rural areas have long been identified as underserved (Ferguson, 1996). Rural adolescents may also be at increased risk for long-term disabilities because they lack access to preventive and treatment services. To compound this problem, programs to promote adolescent health are generally focused on urban and suburban populations (National Institute of Nursing Research, 1993).

Research on health-related behaviors suggests that rural youth are no less likely

than urban and suburban youth to engage in risky behaviors. However, the opportunities for health promotion activities aimed at youth are different in rural settings. Rural youth lack access to health-promoting/preventive and treatment services. These services are many times not available or are very limited (National Institute of Nursing Research, 1993).

Tobacco use is a major concern for Kentucky because it has the highest rate of tobacco use in the nation. In 1990, 75% of Kentucky high school students surveyed reported trying cigarettes at least once, and 37% had smoked at least one cigarette in the preceding month (Kentucky Department of Education, 1990). Rural male youth in Kentucky had a higher rate of smokeless tobacco use than had been reported in any other state. Tobacco use was also greater in students who were involved in tobacco farming (Noland et al., 1990).

Many youth are at risk for occupational injuries (Pollack et al., 1990; Alexander et al., 1992), and in rural areas, farm injuries are the most frequent type of occupational injury (Pollack et al., 1990; Dunn & Runyan, 1993). Results of rural child labor farm hazards (as well as for adults) include: lacerations, amputations, and crush injuries from farm machinery; blunt trauma from large animals; motor vehicle accidents involving farm vehicles on public roads; risk of suffocation in grain elevators and silos; and exposure to pesticides. Additional risk to young workers occurs from small physical size and inexperience (Pollack, et al., 1990).

Hearing loss was studied among adolescent farm children in central Wisconsin with audiometric threshold testing of 872 vocational agriculture students over a three

year period. Students actively involved in farm work showed an increased prevalence of hearing loss as compared to their peers not involved in farm work. The study results also suggested that the use of hearing protection may reduce the risk of hearing loss.

However, few students reported the use of such devices (Broste et al., 1989).

Additionally, rural adolescents who work on farms are among those who are at increased risk of developing melanomas and/or basal skin cancer later in life. This added risk may be related to prolonged sun exposure (Stagg & Tucker, 1995).

Theoretical Framework

The conceptual framework for this study is based on a combination of theories that include Albert Bandura's theory of Social Learning, Martin Fishbein's theory of Reasoned Action, and Nola Pender's Health Promotion Model. The combination of these three theories serves to explain why adolescents engage in health risk behaviors.

A prototype model of risk behavior was described and tested in a longitudinal study of 679 college students, beginning with the start of their freshman year. Perceptions of the prototype associated with the health risk behaviors of smoking, drinking, reckless driving, and ineffective contraception were assessed along with self-reports of the same behaviors. The results indicated that prototype perception was related to risk behavior in both a reactive and a prospective manner. It was found that perceptions changed as a function of change in behavior and that perceptions predicted those behavior changes. The prospective relation was found to be moderated by social comparison in that the link between perception and behavior change was stronger among

persons who reported frequently engaging in social comparison (Gibbons & Gerrard, 1995). This study links to the conceptual framework as it relates to Bandura's theory of Social Learning (modeling) and Fishbein's theory of Reasoned Action (social norms).

Health behaviors of 100 students from each of 5 campuses of a large university were compared. The specific health behaviors studied consisted of using alcohol and drugs, smoking, and food to cope with stress. It was found that health behaviors are associated with campus environment. Campus environment relates to the aggregate of external circumstances, conditions, and things that affect the existence and development of the individual attending a university (Morris & Schneider, 1992). This study links to the conceptual framework as it relates to Bandura's theory of Social Learning (modeling) and Fishbein's theory of Reasoned Action (social norms).

Living arrangements, knowledge of health risks, and stress as determinants of health-risk behavior among 1,411 college students (aged 18-25 years) were studied by Jones et al. in 1992. It was found that knowledge of health risks was not associated with participation in physical activity or smoking, those who knew more about the harmful effects of alcohol drank less, and those with greater knowledge of health risks practiced fewer risky behaviors. It was found that those living independently were more likely to smoke, and those living in residence halls were less likely to do so. Drinking was more common among those living in residence halls or independently than those living at home. Hall residents engaged in more group physical activity, but their physical activity was unrelated to participation in other health-risk behaviors. The findings suggested that stress was associated with smoking but not with other health practices, and that smoking

may be less influenced by health knowledge and more associated with stress than is drinking (Jones et al., 1992). This study links to the conceptual framework as it relates to Pender's Health Promotion Model (disease prevention and behaviors for enhancing health).

Lifestyle and health-risk behaviors were assessed and compared via the use of a confidential survey completed by 109 intercollegiate athletes and 110 undergraduates who were not involved in intercollegiate sports. It was found that athletes had a significantly higher proportion of risky lifestyle behavior patterns in the following areas: quantity of alcohol consumed, driving while intoxicated with alcohol or other drugs, riding with an intoxicated driver, use of seatbelts, use of helmets when riding a motorcycle or moped, use of contraception, number of sexually transmitted diseases, and number of sexual partners (Nattiv et al., 1991). This study links to the conceptual framework as it relates to Bandura's theory of Social Learning (modeling) and Fishbein's theory of Reasoned Action (social norms).

Relationships among sociodemographic characteristics, family processes, and the initiation of health risk behaviors in early adolescence among 189 sixth and seventh graders from a public middle school were examined by Turner et al. in 1993. A path-analytic model was used to analyze this data. Students who received autonomy support from parents were less likely to initiate sexual intercourse, and students who were emotionally detached tended to come from families with low levels of cohesion and acceptance (Turner et al., 1993). This study links to the conceptual framework as it relates to Pender's Health Promotion Model (the importance of the development of

social support - family support).

Summary of Literature Review

A review of the literature revealed that interest in adolescent health and the importance of health-risk behaviors are beginning to receive the attention and the justified importance they deserve. It is now recognized that priority health-risk behaviors that contribute to the leading causes of mortality, morbidity, and social problems among youth and adults are often established during youth, extend into adulthood, and are interrelated. Most of the morbidity and mortality data on adolescents shows that many of their problems are behaviorally-based. Thus, prevention programs that focus on behavior choices that affect problems such as substance abuse (tobacco, drug and alcohol), suicide, sexual activity, lack of physical activity, poor diet, and accidents can have a greater impact on morbidity and mortality than programs that focus on biologically-based problems.

Rural adolescents are at increased health risk as compared to urban adolescents. They have increased health risks related to several factors which include: being an underserved population, lack of access to preventive and treatment services, tobacco use in students involved in tobacco farming, exposure to mixed farm related accidents, increased exposure to hearing loss, and risk to develop melanomas and/or basal skin cancer related to increased exposure to the sun.

Review of current literature indicates that the YRBS is an appropriate tool for assessing adolescent health risk behaviors in the United States. The YRBS is also an

appropriate tool to aid in developing preventive programs designed to reduce risks associated with the leading causes of mortality and morbidity.

CHAPTER 3

Methodology

Introduction

This section will describe the research design, sample, setting, procedure, data collection, analysis methods, and protection of human subjects for this study. Supporting statements will be included regarding the selection of various methods used.

Research Design

For the purpose of this study, a retrospective, comparative descriptive design was used. According to Burns and Grove (1993), the comparative descriptive design examines and describes differences in variables in two or more groups that occur naturally in the setting. The authors stated that the results obtained from these analyses are frequently not generalized to a population. Because this method was a nonexperimental one, no variables were controlled or manipulated. This retrospective study was the first-time analysis of the data from the Youth Risk Behavior Study administered to ninth grade students at two rural high schools in one Kentucky county, as recorded by Western Kentucky University and the University of Kentucky.

Setting

The setting of this study was two rural high schools in one Kentucky county. These two high schools are representative of rural high schools located in the state of Kentucky. Due to the size of the ninth grade class at each of these schools (348 at one school and 260 at the other school), there was access to the appropriate sample needed for this comparative descriptive study.

Sample

A selected sample of students from two of the three rural high schools in one Kentucky county during the 1996-1997 school year was used for this study. The population from which the sample was taken was composed of all ninth grade students enrolled in school x (348 students) and school y (260 students). In order to assure detection of significant differences between two groups of a medium effect size and power of .80 at $p=.05$ using ANOVA, a sample size of 64 in each group was required (Cohen, 1992a); the sample exceeded this requirement. This method of sampling was chosen as the county studied is very representative of farms and commodities found throughout Kentucky, these two high schools are closely matched in terms of demographic characteristics, and ninth grade students are generally close to the same age. Exclusions to this study were students who did not return a signed (by their parents and themselves) and dated "Informed Consent Document" and those absent on the day the survey was given.

Instruments

Quantitative data was collected using an instrument based on a YRBS tool used by the CDC. This tool is the Kentucky Youth Risk Behavior Survey (KY YRBS), which is an 84-item scale last given to a random sample of high school students across the state in 1995 (see Appendix A). This self-administered questionnaire covers knowledge about the attitudes towards a variety of risk factors. This questionnaire examines topics such as safety and violence, suicide, tobacco use, alcohol use, marijuana use, cocaine and other drug use, AIDS education and information, sexual behavior, body weight, dietary intake, and physical activity. The CDC Youth Risk Behavior Survey, on which the KY YRBS is based, has been used to assess health attitudes, knowledge and behaviors of adolescents in many states (Centers for Disease Control, 1993). The YRBS was found to be best suited for students in grade 8 and above and, except for a few suspect items, students appeared to report personal health risk behaviors reliably over time. The YRBS has been shown to be a reliable and valid scale for adolescent populations. Reliability and validity was done by computing a kappa statistic using qualitative labels for values of kappa as suggested by Landis and Koch revealing 72% of the items rated “substantial” (61-80%) or higher, and more than 90% of the items fell in the category deemed “moderate” (41-60%) or higher (Brenner et al., 1995).

The previously approved NIH grant research project entitled “Empowering Rural Adolescents in Risk Reduction” includes additional items numbered 5 and 86 through 100 which are questions specific to farming. These items were not included for purposes of this study (see Appendix A). The original 1995 YRBS was reordered

(placing less threatening questions at the beginning and the end of the survey, and the more threatening questions in the middle of the survey) and was retyped in this format to enhance student understanding and ease of completion.

Procedure

The principle investigator and the co-investigator gave their permission for implementing this research study. After the Western Kentucky University Human Subjects Review Board approval was granted to proceed with this study, the principal investigator and the co-investigator were contacted by phone, notified of the approval, and an appointment was made with them to discuss the data collection. Records regarding the KY YRBS were kept on the original survey forms. The answers to the survey questions were circled by hand directly on these survey forms. After being notified that these surveys had been completed, the surveys were picked up at Western Kentucky University by the researcher. The two schools were each given a code number, and the answers to the survey questions were also given code numbers. This coded data was placed on a computer disc. After verification by the researcher that data collection was complete, statistical analysis was started on the data.

Analysis

All analysis of data for this study was done by the researcher, both manually and with Statistical Package For The Social Sciences (SPSS) [computer program] (1996), utilizing descriptive and inferential statistical methods. All surveys completed by

students at school x were given a code of 2 ($x = 2$) and all surveys completed by students at school y were given a code of 3 ($y = 3$). Coding of the answers was done prior to statistical analysis ($a = 1$, $b = 2$, $c = 3$, $d = 4$, $e = 5$, $f = 6$, $g = 7$, $h = 8$). Tables were created through the use of Corel Word Perfect [computer program] (1996). After data analysis, a professional statistician was consulted to verify the results.

Ethical Considerations/Protection of Human Subjects

This study was determined to fall under the guidelines of expedited review (the NIH research grant project entitled “Empowering Rural Adolescents in Risk Reduction” was previously given a full review) by the Western Kentucky University Human Subjects Review Board and a letter was received by the researcher granting approval (see Appendix B). Because there was no intervention, no anticipated effects or risks were expected for the groups of persons composing the sample population. Benefits of this study include: information about specific health risk behaviors that these two groups of high school students in one Kentucky county are engaging in, and the possibility that this information can provide direction for future educational programs directed toward the specific health risk behaviors of these students. This study involved no research based interaction between the subjects in the sample and the researcher as this information was previously collected by the principal investigator at Western Kentucky University in conjunction with the University of Kentucky, and the survey data was held by them. This information (all lists of names, consent forms, and YRBS results) was kept in a locked file in the office of the primary investigator for the study entitled “Empowering Rural

Adolescents in Risk Reduction.” The information used by the researcher from the master surveys held at Western Kentucky University was information identified by the school the students attended. The anonymity of the individuals in the sample should be completely protected related to the fact that students did not write their names on the completed surveys, no information was provided to the researcher that listed names, identifying codes, or individual response to testing. There is no likelihood that the results for any one person can be identified by this researcher or by the data information that was collected. A potential risk in a study such as this is invading the privacy of subjects due to the fact that groups of students were named by the high school attended, and a student could be linked to a specific group. Related to the fact that the subjects are minors and in order to obtain informed consent from the parents and assent from the student to be included or excluded in this study, a consent form was filed with Western Kentucky University Human Subjects Review Board (see Appendix C).

CHAPTER 4

Results

Introduction

The purpose of this retrospective, descriptive study was to identify the health risk behaviors of rural adolescents from two high schools in one Kentucky county and to compare the two schools to determine if the health risk behaviors of these students were the same or different. Data obtained from the 1995 version of the Youth Risk Behavior Survey (YRBS) administered March 1997 for the NIH grant research project entitled “Empowering Rural Adolescents in Risk Reduction” were analyzed to address the research objectives of the study. Additional findings and limitations are discussed along with the results of the data analysis.

Sample and Data

Western Kentucky University and the University of Kentucky provided information obtained from the 1995 version of the Youth Risk Behavior Survey (YRBS) for the NIH grant research project entitled “Empowering Rural Adolescents in Risk Reduction.” These surveys were given to ninth grade students from two respective high

schools in one Kentucky county in March of 1997 which included school x ($\underline{n} = 96$) and school y ($\underline{n} = 55$). The total number of enrolled ninth grade students for school x was 348 and for school y was 260. From the 608 ninth grade students enrolled at these two high schools, it was determined that a total of 151 ($\underline{N} = 151$) of the students who met the criteria for inclusion actually completed the self-administered survey (see Table 1). This sample was composed of ninety-six ($\underline{n} = 96$), or 28% of the students enrolled in the ninth grade at school x, and fifty-five ($\underline{n} = 55$), or 21% of the students enrolled in the ninth grade at school y. The overall sample ($\underline{N} = 151$) represented 24.8% of the ninth grade students enrolled at the two respective high schools during the time-frame of the study. Demographics for these students are as follows: 41.7% were female and 58.3% were male; 37.1% were 14 years old, 48.3% were 15 years old, 13.2% were 16 years old, .7% were 17 years old, and .7% were 18 years old; and 91.4% were white-not Hispanic, 4.6% were black not- Hispanic, .7% were Hispanic or Latino, .7% were Asian or Pacific Islander, 1.3% were American Indian or Alaskan, .7% were other, and .7% were unknown related to missing data.

The sample information that was received included (a) the number of ninth grade students enrolled at each school, (b) the number of ninth grade students from each school with signatures for both parental consent and student assent for taking the survey, and (c) the number of ninth grade students who completed the survey from each school. The survey information received included information about (a) demographics, (b) dietary habits, (c) physical activity, (d) body weight, (e) safety and violence, (f) suicide, (g) tobacco use, (h) alcohol use, (i) marijuana use, (j) cocaine and other drug use,

Table 1

Sample Selection and Elimination Factors: Based on Completion of Youth Risk Behavior Survey (YRBS) From School x (\underline{N} = 96) and School y (\underline{N} = 55).

9 th Grade Students	School x		School y	
Students Enrolled	(\underline{N} = 348)		(\underline{N} = 260)	
	n	%	n	%
Elimination Factors				
No Informed Consent	230	(66.1)	199	(76.5)
Survey Not Completed	16	(4.6)	6	(2.3)
Pilot Study Participation	6	(1.7)		
Total Eliminated	252	(72.4)	205	(78.8)
Accepted Sample				
Survey Completed	96	(27.6)	55	(21.2)

Note: Accepted sample (\underline{N} = 151) represents 24.8% of the total number of enrolled students.

(k) AIDS education and information, (l) and sexual behavior.

Objective One

To identify health risk behaviors common to adolescents.

The Youth Risk Behavior Surveillance System (YRBSS) was developed by the CDC and has been used since 1990 to monitor and improve national, state, and local policies and programs designed to reduce risks associated with the leading causes of mortality and morbidity. The six categories of priority health-risk behaviors among youth and young adults include: behaviors that contribute to unintentional and intentional injuries, tobacco use, alcohol and other drug use, sexual behaviors, unhealthy dietary behaviors, and physical inactivity (Centers for Disease Control, 1996).

Health risk behaviors common to adolescents were obtained from the 1995 results (these are the most recent published results) for the United States. These results indicate that 72% of all deaths among school-aged youth and young adults resulted from four causes: motor vehicle crashes, other unintentional injuries, homicide, and suicide. The 1995 YRBS results suggest that many high school students practice behaviors that may increase their likelihood of death from these four causes. Health risk behaviors reported by these students for these four causes of death included: 21.7% had rarely used a safety belt, 38.8% had ridden with a driver who had been drinking alcohol during the 30 days preceding the survey, 20.0% had carried a weapon during the 30 days preceding the survey, 51.6% had drunk alcohol during the 30 days preceding the survey, 25.3% had

used marijuana during the 30 days preceding the survey, and 8.7% had attempted suicide during the 12 months preceding the survey (Centers for Disease Control, 1996).

Unintended pregnancies and sexually transmitted diseases, including human immunodeficiency virus infection, also result in substantial morbidity and social problems among school-age youth and young adults. The 1995 YRBS results also indicated that 53.1% of high school students had had sexual intercourse, 45.6% of sexually active students had not used a condom at last sexual intercourse, and 2.0% had injected an illegal drug. These reported health risk behaviors are also among the four causes that increase the likelihood of death among school-age youth and young adults (Centers for Disease Control, 1996).

Sixty-five percent of all deaths among adults resulted from three causes: heart, disease, cancer, and stroke, and most of the risk behaviors associated with these causes of death are initiated during adolescence. During 1995, 34.8% of high school students had smoked cigarettes during the 30 days preceding the survey, 39.5% had eaten more than two servings of foods typically high in fat content during the day preceding the survey, and only 25.4% had attended physical education class daily (Centers for Disease Control, 1996).

Objective Two

To describe the health risk behaviors of adolescents attending two rural high schools in one Kentucky county.

Health risk behaviors of adolescents attending two rural high schools in one

Kentucky county were computed by combining the YRBS results from school x and from school y. These high schools are two of the three county high schools in one Kentucky county, and were used to represent a sample of the ninth grade students attending county high schools located in this county.

The health risk behaviors related to the major causes of morbidity and mortality for school-age youth and young adults and deaths among adults which result from health risk behaviors initiated during adolescence for high school students in one Kentucky county were reported as follows: 18.5% rarely used a safety belt, 38.4% rode with a driver who had been drinking alcohol, 33.1% carried a weapon during the 30 days preceding the survey, 51.0% drank alcohol during the 30 days preceding the survey, 34.4% used marijuana during the 30 days preceding the survey, 11.9% attempted suicide during the 12 months preceding the survey, 40.4% had sexual intercourse, 21.2% did not use a condom at last sexual intercourse, 7.3% injected an illegal drug, 53.6% smoked cigarettes during the 30 days preceding the survey, 64.0% ate > 2 servings of foods typically high in fat content during the day preceding the survey, and 40.4% attended physical education class daily. The health risk behaviors reported for one Kentucky county are best described using a table (see Table 2). This table shows the relationship of health risk behaviors reported in one Kentucky county and those reported with the 1995 YRBS for the U.S.

Objective Three

To identify the relationship of health risk behaviors of students from school x

Table 2

*Health Risk Behaviors From Two Rural High Schools in One Kentucky County.
Reported Using the 1995 Youth Risk Behavior Survey (YRBS).*

<u>Health Risk Behavior</u>	<u>Kentucky County</u>	<u>*1995 U.S. Results</u>
Rarely used a safety belt	18.5%	21.7%
Ridden with a driver who had been drinking alcohol	38.4%	38.8%
Carried a weapon during the 30 days preceding the survey	33.1%	20.0%
Drunk alcohol during the 30 days preceding the survey	51.0%	51.6%
Used marijuana during the 30 days preceding the survey	34.4%	25.3%
Attempted suicide during the 12 months preceding the survey	11.9%	8.7%
Had sexual intercourse	40.4%	53.1%
Not used a condom at last sexual intercourse	21.2%	45.6%
Injected an illegal drug	7.3%	7.3%
Smoked cigarettes during the 30 days preceding the survey	53.6%	34.8%
Eaten > 2 servings of foods high in fat content during the day preceding the survey	64.0%	39.5%
Attended physical education class daily	40.4%	25.4%

*The U.S. results are provided for ease of comparison of Objectives One and Two.

and school y.

Of the 96 students composing the study sample from school x, health risk behaviors were identified specific to this student population. This group of high school students practice health risk behaviors that may increase their likelihood of death from the four leading causes (motor vehicle crashes, other unintentional injuries, homicide, and suicide) among school-age youth and young adults: 18.8% rarely used a safety belt, 39.6% had ridden with a driver who had been drinking alcohol during the 30 days preceding the survey, 13.5% had carried a weapon during the 30 days preceding the survey, 53.1% had drunk alcohol during the 30 days preceding the survey, 36.5% had used marijuana during the 30 days preceding the survey, and 13.5% had attempted suicide during the 12 months preceding the survey. Related to the category of unintended pregnancies and sexually transmitted diseases, including human immunodeficiency virus infection which, result in substantial morbidity and social problems among school-age youth and young adults, results from school x indicated that: 32.3% of these students had had sexual intercourse, 19.8% of sexually active students had not used a condom at last sexual intercourse, and 7.3% had injected an illegal drug. Related to the category where health risk behaviors initiated during adolescence lead to 65% of all adult deaths from heart disease, cancer, and stroke, results from school x indicated that 54.2% had smoked cigarettes during the 30 days preceding the survey, 60.4% had eaten more than two servings of foods typically high in fat content during the day preceding the survey, and only 33.3% had attended physical education class daily.

Of the 55 students composing the study sample from school y, health risk

behaviors were identified specific to this student population. This group of high school students practice health risk behaviors that may increase their likelihood of death from the four leading causes (motor vehicle crashes, other unintentional injuries, homicide, and suicide) among school-age youth and young adults: 18.2% had rarely used a safety belt, 36.4% had ridden with a driver who had been drinking alcohol during the 30 days preceding the survey, 45.5% had carried a weapon during the 30 days preceding the survey, 47.3% had drunk alcohol during the 30 days preceding the survey, 30.9% had used marijuana during the 30 days preceding the survey, and 9.1% had attempted suicide during the 12 months preceding the survey. Related to the category of unintended pregnancies and sexually transmitted diseases, including human immunodeficiency virus infection, which result in substantial morbidity and social problems among school-age youth and young adults, results from school y indicated that: 54.5% of these students had had sexual intercourse, 23.6% of sexually active students had not used a condom at last sexual intercourse, and 7.3% had ever (in their lifetime) injected an illegal drug. Related to the category where health risk behaviors initiated during adolescence lead to 65% of all adult deaths from heart disease, cancer, and stroke, results from school y indicated that 52.7% of these students had smoked cigarettes during the 30 days preceding the survey, 58.8% had eaten more than two servings of foods typically high in fat content during the day preceding the survey, and only 52.7% had attended physical education class daily.

The relationship (comparison) of the health risk behaviors from school x and school y are best described using a table (see Table 3). This table also shows the

Table 3

Relationship of Health Risk Behaviors From School x and School y: Based on Frequency Reported Using the 1995 Youth Risk Behavior Survey (YRBS).

<u>Health Risk Behavior</u>	<u>School x</u>	<u>School y</u>	<u>1995 U.S. Results</u>
Rarely used a safety belt	18.8%	18.2%	21.7%
Ridden with a driver who had been drinking alcohol	39.6%	36.4%	38.8%
Carried a weapon during the 30 days preceding the survey	13.5%	45.5%	20.0%
Drunk alcohol during the 30 days preceding the survey	53.1%	47.3%	51.6%
Used marijuana during the 30 days preceding the survey	36.5%	30.9%	25.3%
Attempted suicide during the 12 months preceding the survey	13.5%	9.1%	8.7%
Had sexual intercourse	32.3%	54.5%	53.1%
Not used a condom at last sexual intercourse	19.8%	23.6%	45.6%
Injected an illegal drug	7.3%	7.3%	2.0%
Smoked cigarettes during the 30 days preceding the survey	54.2%	52.7%	34.8%
Eaten > 2 servings of foods high in fat content during the day preceding the survey	60.4%	58.8%	39.5%
Attended physical education class daily	33.3%	52.7%	25.4%

relationship to the 1995 U.S. results of this same survey tool.

Objective 4

To determine the difference between school x and school y regarding health risk behaviors in two rural high schools in one Kentucky county.

The YRBS results from school x ($n = 96$) and school y ($n = 55$) made up the total sample ($N = 151$). The survey results were analyzed to determine the difference in adolescent health risk behaviors between the two schools. The nonparametric Mann-Whitney U test was used to analyze answers recorded in ordinal data, and the parametric t test for independent samples was used to analyze answers recorded in interval data.

A Mann-Whitney U test was used to compare ordinal data related to the health risk behaviors of students from school x ($n = 96$) and school y ($n = 55$). With an alpha level of .05, the health risk behaviors showed a statistically significant difference in the following selected areas: eaten > 2 servings of foods high in fat content during the day preceding the survey (for cookies, donuts, pie, or cake), $U = 1998$, $p < .05$; rarely used a seat belt, $U = 2005$, $p < .05$; carried a weapon during the 30 days preceding the survey, $U = 2016$, $p < .05$; ever had sexual intercourse, $U = 2052$, $p < .05$; and not used a condom at last sexual intercourse, $U = 2136$, $p < .05$. With an alpha level of .05, the distributions did not differ significantly in the following areas: eaten > 2 servings of foods high in fat content during the day preceding the survey (for hamburger, hot dogs, or sausage), $U = 2229$, $p > .05$; eaten > 2 servings of foods high in fat content during the day preceding the

survey (for french fries or potato chips), $\underline{U} = 2221$, $p > .05$; ridden with a driver who had been drinking alcohol, $\underline{U} = 2619$, $p > .05$; attempted suicide during the 12 months preceding the survey, $\underline{U} = 2512$, $p > .05$; smoked cigarettes during the 30 days preceding the survey, $\underline{U} = 2633$, $p > .05$; drunk alcohol during the 30 days preceding the survey, $\underline{U} = 2574$, $p > .05$; used marijuana during the 30 days preceding the survey, $\underline{U} = 2355$, $p > .05$; and ever injected an illegal drug, $\underline{U} = 2636$, $p > .05$ (see Table 4).

A t test for independent samples was used to compare interval data related to health risk behaviors of students from school x ($n = 96$) and school y ($n = 55$). With alpha equal to .05 and a two-tailed test, a t test revealed no difference in the selected health risk behavior of attending physical education class daily for students attending school x ($M = 3.0$, $SD = 2.37$) and school y ($M = 3.8$, $SD = 2.46$), $t(148) = -1.86$, $p > .05$.

Additional Findings and Limitations

Of the students with signed parent consent and student assent (excluding the 6 students participating in the pilot study) in the two sample groups (173), there were 151 students who completed the survey. The compliance rate of eligible students for school x was 85.7%, and for school y it was 90.2%. Thus, there was an 87.3% combined rate of compliance among the sample to the University requirements for survey eligibility. The overall response rate for this study (student response was 24.8%, and 2 schools were included in this study for a 100% response rate) was 62.4% and is very similar to the overall rate of 60.0% (student response was 86.0%, and 110 schools were included in this study for a 70% response rate) for the U.S. YRBS (Centers for Disease

Table 4

Mann-Whitney U Tests: Differences Between School x and School y For Youth Risk Behavior Survey (YRBS) Results.

<u>Health Risk Behavior</u>	<u>U</u>	<u>Significance</u>
Rarely used a safety belt	2005	.0264*
Ridden with a driver who had been drinking alcohol	2619	.9259
Carried a weapon during the 30 days preceding the survey	2016	.0039*
Drunk alcohol during the 30 days preceding the survey	2574	.7846
Used marijuana during the 30 days preceding the survey	2355	.2711
Attempted suicide during the 12 months preceding the survey	2512	.3788
Ever had sexual intercourse	2052	.0075*
Not used a condom at last sexual intercourse	2136	.0265*
Ever injected an illegal drug	2636	.9760
Smoked cigarettes during the 30 days preceding the survey	2633	.9770
Eaten > 2 servings cookies, donuts, pies the day preceding the survey	1998	.0195*
Eaten > 2 servings hamburger, hot dogs, or sausage the day preceding the survey	2229	.1471
Eaten > 2 servings french fries or potato chips the day preceding the survey	2221	.1452

* Significant at .05

Control, 1996).

A limitation that biased the sample was that without the signed and dated informed consent document by both the parent (consent) and the student (assent); the Youth Risk Behavior Survey could not be completed by the student. According to Cohen (1992) the number of students needed to complete the survey to assure detection of significant differences between two groups of a medium effect size and power of .80 at $p = .05$ was 64 ($n = 64$). The number of students from school x who were eligible to participate was 48 students larger than required ($n = 112$), and 32 larger than required ($n = 96$) actually completed the survey. The number of students from school y who were eligible to participate was 3 students smaller than required ($n = 61$), and 9 smaller than required ($n = 55$) actually completed the survey. Therefore, the smaller number of students than required to complete the survey from school y, and the larger number of students than required to complete the survey from school x may limit the generalizability of this study for the respective school populations.

CHAPTER 5

Discussion

Introduction

In this chapter the researcher will discuss and summarize the overall conclusions and significant findings of the study regarding the research objectives: (a) To identify health risk behaviors common to adolescents, (b) To describe the health risk behaviors of adolescents attending two rural high schools in one Kentucky county, (c) To identify the relationship of health risk behaviors of students from school x and school y, (d) To determine the difference between school x and school y regarding health risk behaviors in two rural high schools in one Kentucky county.

This research was conducted using a retrospective, descriptive design. Descriptive and inferential statistical methods of analysis were used. The intent of this research was to identify the health risk behaviors of rural adolescents from two high schools in one Kentucky county and to compare the two schools to determine if the health risk behaviors of these students were the same or different. Implications for nursing and specific recommendations for future research will also be discussed.

Subjects and Data

Western Kentucky University and the University of Kentucky provided information obtained from the 1995 version of the Youth Risk Behavior Survey (YRBS) records of the students participating in the NIH grant research project entitled “Empowering Rural Adolescents in Risk Reduction” during the time-frame of the first year of the study. An alpha level of .05 was used for tests of significance.

The subjects in this study represented ninth grade students at two high schools in one Kentucky county who were enrolled for the 1996-1997 school year. The entire population of ninth grade students enrolled for the 1996-1997 school year consisted of school x (348) and school y (260), for a total of 608 students. The YRBS was offered to these students. Informed consent to complete the survey was obtained from students at school x (118) and school y (61) for a total of 179 students to make up the sample. For the 179 students eligible to complete the YRBS, there were one hundred and fifty-one ($N = 151$) students who had completed the YRBS. Randomization was not applied because the study design included sampling from the entire student population, which was limited to those students with documented informed consent.

It was of interest to note that the students in the study by the CDC (1996) consisted of 10,904 completed surveys from 110 schools which accounted for a student response rate of 86% and a school response rate of 70%. These student response and school response rates were not similar to the 100% school response rate (both schools agreed to participate in this study prior to initiation of the study) and the 24.8% student response rate to completion of the YRBS demonstrated by the current study sample.

However, the overall response rates (student response rate + school response rate - 2) were similar for both the 1995 U.S. YRBS results (60%) compared to the results obtained from this study (62.4%).

This study sample represented 24.8% of the ninth grade students enrolled at the two respective high schools during the time-frame of the study. In health risk behavior studies, such as this, a main function is to identify priority health-risk behaviors among youth and young adults in specific populations as well as for the United States as a whole. Variables obtained from the YRBS included: demographics, dietary habits, physical activity, body weight, safety and violence, suicide, tobacco use, alcohol use, marijuana use, cocaine and other drug use, AIDS education and information, and sexual behavior (Centers for Disease Control, 1996).

Demographically, school x and school y are not statistically significant relative to sex, age, and race. These demographic variables are best described using a table (see Table 5). This table shows the rate of occurrence for these three variables for the two high schools combined (representing one Kentucky county), school x and school y. This table also shows the statistical significance of these variables between school x and school y. Discussion of further data will be included as each objective is addressed.

Objective One

To identify health risk behaviors common to adolescents.

According to the CDC (1996), occurrence rates of specific health risk behaviors can be valuable to practitioners, as well as others concerned with adolescent health

Table 5

Demographic Variables (Sex, Age, and Race) for One Kentucky County, School x, and School y.

Mann-Whitney U Tests: Demographic Differences Between Students Attending School x and School y.

	<u>Kentucky County</u>	<u>School x</u>	<u>School y</u>	<u>Mann-Whitney U</u>	<u>Significance</u>
<u>Sex</u>					
Female	41.7%	46.9%	32.7%	2266	.0908
Male	58.3%	53.1%	67.3%		
<u>Age</u>					
14 years old	37.1%	41.7%	29.1%	2215	.0719
15 years old	48.3%	46.9%	50.9%		
16 years old	13.2%	10.4%	18.2%		
17 years old	.7%	0.0%	1.8%		
18 years old	.7%	1.0%	0.0%		
<u>Race</u>					
White-not Hispanic	91.4%	91.7%	90.9%	2557	.1869
Black-not Hispanic	4.6%	4.2%	5.5%		
Hispanic or Latino	.7%	1.0%	0.0%		
Asian or Pacific Islander	.7%	0.0%	1.8%		
American Indian or Alaskan Native	1.3%	1.0%	1.8%		
Other	.7%	1.0%	0.0%		
Missing data	.7%	1.0%	0.0%		

* Significant at .05

issues. The YRBS results are used for the purpose of monitoring and improving national, state, and local policies and programs designed to reduce risks associated with the leading causes of mortality and morbidity.

The 1995 U.S. YRBS results indicated that the health risk behaviors commonly practiced in 1995 by adolescents that may increase their likelihood of death come from four major causes: motor vehicle crashes, other unintentional injuries, homicide, and suicide. Health risk behaviors related to these four major causes of death among school-age youth and young adults and also for those that contribute to deaths among adults resulting from health risk behaviors initiated during adolescence included: safety belt use, riding with a driver who had been drinking alcohol, carrying a weapon, drinking alcohol, using marijuana, attempting suicide, engaging in sexual intercourse, not using a condom during sexual intercourse, injecting an illegal drug, smoking cigarettes, eating more than two servings of foods high in fat content, and physical exercise (Centers for Disease Control, 1996). These health risk behaviors are of great concern for adolescents in general. However, it is also important to assess these same health risk behaviors for specific adolescent populations to enable us to direct programs that are appropriate to the needs of specific adolescent populations.

Objective Two

To describe the health risk behaviors of adolescents attending two rural high schools in one Kentucky county.

For purposes of this study, these same 12 variables were used to assess the health

risk behaviors practiced by rural adolescents attending two high schools in one Kentucky county. This assessment was done to identify health risk behaviors associated with the leading causes of death for school-age youth and young adults, and also for deaths among adults which result from health risk behaviors initiated during adolescence for these specific adolescent populations. Once identified, programs can be directed towards the areas of greatest concern.

The YRBS was the tool used to assess these adolescent health risk behaviors. It has been shown to be a reliable and valid scale for adolescent populations. Reliability and validity were confirmed by computing a kappa statistic using qualitative labels for values of kappa as suggested by Landis and Koch revealing 75% of the items rated “substantial” (61-80%) or higher, and more than 90% of the items fell in the category deemed “moderate” (41-60%) or higher (Brenner et al., 1995). As reliability and validity were previously confirmed for use of the YRBS with adolescent populations, the responses to the YRBS for this study are believed to be both reliable and valid for this adolescent population.

Research on health-related behaviors suggests that rural youth are no less likely than urban and suburban youth to engage in risky behaviors (National Institute of Nursing Research, 1993). This statement is supported by the health risk behaviors reported for students in one Kentucky county (see Table 2).

The health risk behaviors related to the major causes of morbidity and mortality in school-age youth and young adults and those that contribute to deaths among adults resulting from health risk behaviors initiated during adolescence were reported to be

practiced by adolescents in one Kentucky county. These health risk behaviors reported to be practiced with the greatest frequency by these adolescents were both similar to and different from those reported by the 1995 U.S. YRBS results. Of these, the most frequently practiced health risk behaviors for one Kentucky county in rank order included: (1) consumption of foods high in fat content, (2) cigarette smoking, (3) alcohol consumption, (4) sexual intercourse, (5) physical exercise, (6) riding with a driver who had consumed alcohol, (7) marijuana use, (8) carrying a weapon, (9) condom use, (10) safety belt use, (11) suicide, and (12) injected an illegal drug. The 1995 results reported by the CDC (1996) for the U.S. YRBS in rank order included: (1) sexual intercourse, (2) alcohol consumption, (3) condom use, (4) consumption of foods high in fat content, (5) riding with a driver who had consumed alcohol, (6) cigarette smoking, (7) physical exercise, (8) marijuana use, (9) safety belt use, (10) carrying a weapon, (11) suicide, and (12) injected an illegal drug (see Table 6).

The rank order for one Kentucky county results and for the 1995 U.S. YRBS results were the same for suicide and injection of an illegal drug. These results were close to the same (within 2 of each other in rank order) for safety belt use, riding with a driver who had consumed alcohol, carrying a weapon, alcohol consumption, marijuana use, and physical exercise. These results were different for sexual intercourse, condom use, cigarette smoking, and consumption of foods high in fat content. The differences in health risk behaviors may be attributable to the U.S. adolescent population in general (assessing all groups of adolescents) and the specific rural adolescent population of one Kentucky county. This information relates back to the framework of the study in that

Table 6

Rank Order of Health Risk Behaviors From Two Schools in One Kentucky County and the 1995 U.S. Results: Based on Frequency Reported Using the 1995 YRBS.

<u>Health Risk Behavior</u>	<u>Rank Order</u>	<u>Kentucky County</u>	<u>Rank Order</u>	<u>U.S.</u>
Rarely used a safety belt (C)	10	18.5%	9	21.7%
Ridden with a driver who had been drinking alcohol (C)	6	38.4%	5	38.8%
Carried a weapon during the 30 days preceding the survey (C)	8	33.1%	10	20.0%
Drunk alcohol during the 30 days preceding the survey (C)	3	51.0%	2	51.6%
Used marijuana during the 30 days preceding the survey (C)	7	34.4%	8	25.3%
Attempted suicide during the 12 months preceding the survey (S)	11	11.9%	11	11.9%
Had sexual intercourse (D)	4	40.4%	1	53.1%
Not used a condom at last sexual intercourse (D)	9	21.2%	3	45.6%
Injected an illegal drug (S)	12	7.3%	12	7.3%
Smoked cigarettes during the 30 days preceding the survey (D)	2	53.6%	6	34.8%
Eaten > 2 servings of foods high in fat content during the day preceding the survey (D)	1	64.0%	4	39.5%
Attended physical education class daily (C)	5	40.4%	7	25.4%

Note: (S) = same in rank order, (C) = close in rank order (within 2 of each other), (D) = different in rank order (> 2 from each other)

these differences may be attributable to behaviors acquired through observational learning or modeling, and through personal attitudes and social norms specific to Warren County, Kentucky.

Objective Three

To identify the relationship of health risk behaviors of students from school x and school y.

The relationship of specific health risk behaviors reported by students from school x and from school y were assessed. The relationship of these specific health risk behaviors for school x/school y were reported as follows: rarely used a safety belt 18.8%/18.2%, ridden with a driver who had been drinking alcohol 39.6%/36.4%, carried a weapon during the 30 days preceding the survey 13.5%/45.5%, drunk alcohol during the 30 days preceding the survey 53.1%/47.3%, used marijuana during the 30 days preceding the survey 36.5%/30.9%, attempted suicide during the 12 months preceding the survey 13.5%/9.1%, ever had sexual intercourse 32.3%/54.5%, not used a condom at last sexual intercourse 19.8%/23.6%, injected an illegal drug 7.3%/7.3%, smoked cigarettes during the 30 days preceding the survey 54.2%/52.7%, eaten > 2 servings of foods high in fat content during the day preceding the survey 60.4%/58.8%, and attended physical education class daily 33.3%/52.7%.

According to the CDC (1996), health risk behaviors of adolescents may show state and local survey variations. These variations may be attributable to differences in state and local laws and policies, enforcement practices, access to illegal drugs, available

intervention programs, and prevailing norms and adult practices. Among local surveys, levels of variation were found for not using safety belts, smokeless-tobacco use, cocaine use, injecting-drug use, use of other illegal drugs, and initiation of cocaine use before 13 years of age (Centers for Disease Control, 1996).

Variations between school x and school y were indicated for carrying a weapon, attempted suicide, sexual intercourse, and physical exercise. Both of these schools are both located in the same Kentucky county, and local laws and policies are basically the same. Therefore, the local laws and policies should not account for any variations between the schools. Due to these schools being located at opposite ends of the same county, enforcement practices, access to illegal drugs, available intervention programs, and prevailing norms and adult practices could attribute to these variations. These possible variations were not addressed in the YRBS questions.

According to the CDC (1996), some health risk behaviors are more likely to be found among particular subgroups of students. School x and school y are subgroups (by school attended) of students from one Kentucky county. The demographic variables of sex, age, and race were assessed through the YRBS and may explain some of the variations of health risk behaviors related to the subgroups of students related to the high school they attended.

The number of students who carried a weapon was greater at school y than at school x. According to the CDC (1996), Hispanic students were more likely to carry a weapon than white or black students. The Hispanic student population does not explain the higher incidence of students carrying a weapon at school y, as school y has a 0.0%

Hispanic population and school x has a 1.0% Hispanic population. The Hispanic population is greater, although still low, at school x.

The number of students who attempted suicide was greater at school x than at school y. According to the CDC (1996), female students were more likely than male students to report suicide-related behaviors. School x had 46.9% female students and school y had 32.7% female students. The female student population may explain the higher incidence of students who attempted suicide at school x. The CDC (1996) also reports that white students were more likely than black or Hispanic students to report seriously considering attempting suicide. Race does not explain the higher incidence of attempted suicide at school x, as white, black, and Hispanic populations are very similar for both schools.

The number of students who engaged in sexual intercourse was greater at school y than at school x. According to the CDC (1996), black students were more likely than white or Hispanic students to report sexual activity. Race does not explain the higher incidence of sexual intercourse at school y, as white, black, and Hispanic populations are very similar for both schools.

The number of students who attend daily physical education class was greater at school y than at school x. According to the CDC (1996), local surveys varied nearly ninefold from 9% to 78% (median was 33.9%). Daily physical education class attendance may be related to block scheduling of classes where students may not have been scheduled in physical education class when they took the YRBS. School x and school y both participate in block scheduling. Block scheduling may explain the higher

attendance in daily physical education class at school y; however, this variable was not addressed with the YRBS questions. The CDC (1996) also reports a greater attendance in physical education class for students in the ninth grade. Enrollment in the ninth grade does not explain the higher attendance in daily physical education class at school y, as all the students in this study were enrolled in the ninth grade.

This information relates back to the framework of the study in that the relationship of health risk behaviors may be attributable to behaviors acquired through observational learning or modeling and through personal attitudes and social norms specific to groups of students as to the high school attended. Further research exploring relationships of variables between these two groups would be needed to address prevention of adolescent health risk behaviors and promotion of health for these specific groups of students.

Objective Four

To determine the difference between school x and school y regarding health risk behaviors in these two rural high schools in one Kentucky county.

In comparing each of the selected health risk behaviors for students attending school x and school y, an alpha of .05 was used. A statistically significant difference was shown in comparison between school x (0.64%) and school y (0.36%) in the following areas: rarely used a safety belt, carried a weapon during the 30 days preceding the survey, ever had sexual intercourse, not used a condom at last sexual intercourse, and eaten > 2 servings cookies, donuts, pies the day preceding the survey. These differences in health

risk behaviors may be attributable to the same factors that were discussed with Objective Three. In order to determine whether there is any clinical significance in the statistical significance that was shown, further research exploring relationships of variables between these two groups would be needed.

The results of this section of the study indicated that there are significant differences in rates of occurrence of some health risk behaviors among students attending school x and those attending school y, and there are also similarities in rate of occurrence of other health risk behaviors among these same groups of students. The differences between school x and school y may be attributable to differences in enforcement practices, access to illegal drugs, available intervention programs, and prevailing norms and adult practices. Centers for Disease Control, 1996). Further exploration of these variations may indicate important intervention needs specific to these two rural high schools.

Summary

In this study, the results indicate that ninth grade students attending school x and school y have both differences and similarities in reported health risk behaviors. This finding indicated that groups of students (by school attended) were practicing health risk behaviors different from those being practiced by others. A review of the literature confirmed that some risk behaviors are more likely to be found among particular subgroups of students, and that considerable variation occurs from state to state and from city to city. These variations may be attributable to differences in enforcement practices,

access to illegal drugs, available intervention programs, and prevailing norms and adult practices (Centers for Disease Control, 1996).

In the United States, the YRBS is the standard method for identifying health risk behaviors that contribute to the leading causes of mortality, morbidity, and social problems among youth and adults. Practicing these health risk behaviors may contribute to mortality, morbidity, and social problems for adolescents in the future.

Although it is not 100% perfect in reliability and validity, the YRBS is an appropriate and valuable tool for use in screening for health risk behaviors (Brenner et al., 1995), and screening is an important aspect of secondary prevention. It is important to recognize that prevention can be observed, but is hard to measure. Based on the results of the YRBS, adolescent health risk behaviors can be evaluated and training and instructional programs for specific groups of students can be modified accordingly. Therefore, continued surveillance of adolescent health risk behaviors and assessment of the findings are essential components of effective adolescent health care services.

Conclusions

In conclusion, the practice of health risk behaviors continues to be a major health problem in the United States and one that places adolescents at risk for serious health problems. This statement is supported by recent YRBS reports from the CDC documenting health risk behavior results for high school students. The extent of health risk behaviors practiced varies considerably from state to state and city to city. This variation may be attributable to differences in state and local laws and policies,

enforcement practices, access to illegal drugs, available intervention programs, and prevailing norms and adult practices.

These differences may occur relative to observational learning, or modeling as described in Bandura's theory of Social Learning. They may also occur as a function of personal attitudes and social norms as described in Martin Fishbein's theory of Reasoned Action. These theories help us to better understand why adolescents practice health risk behaviors.

Adolescence is a time when teenagers are exposed to a variety of influences that will shape their present and later health behaviors. It can also be an ideal time to intervene to improve their health behaviors.

Related to these factors, there is an urgent need to continue to monitor trends in adolescent health risk behaviors and to focus study results such as those obtained through the use of the YRBS tool towards specific groups of adolescents. Disease prevention and behaviors for enhancing the health of adolescents is of the utmost importance and can be achieved through implementation of Nola Pender's Health Promotion Model.

Implications for Nursing

Preventive health services have played a key role in reducing preventable illness, disease, disability, and premature death (Timmrect, 1994). Nursing issues and public health issues regarding adolescent health risk behaviors mandate that a rigorous approach to prevention, and to education, must continue to be used in health care settings, school settings, and in community settings.

Because adolescence is a time when teenagers are exposed to a variety of influences that will shape their present and later health behaviors, it can also be an ideal time to intervene to improve their health behaviors (Office of Technology Assessment, 1991; Department of Health and Human Services, 1991). This information supports the urgent need for nurses to continue to monitor trends in adolescent health risk behaviors and to focus study results such as those obtained through the use of the YRBS tool towards specific groups of adolescents. In doing that, we can direct our prevention and educational programs toward the specific needs of each group.

Nursing must assume an active leadership role in prevention of adolescent health risk behaviors and in the promotion of adolescent health. In accepting a responsible role in this effort, the nurse should be familiar with the specific recommendations regarding life long health habits for adolescents and young adults. The U.S. Department of Health and Human Services (1991) has issued the following recommendations for youth and young adults:

1. Education about risks to health.
2. Programs for adolescents and young adults must go beyond education to include in-depth counseling and support.
3. Especially for youth in high-risk environments, comprehensive programs are needed to provide positive alternatives to alcohol and other drug abuse, teenage pregnancy, and lifestyles conducive to violence.

In taking an active role to follow these recommendations, nurses can incorporate Nola Pender's Health Promotion Model into their daily practice with youth and young

adults. The nursing profession must direct their efforts of prevention and health promotion to the specific needs of the adolescent populations they serve.

Nursing must also be knowledgeable about factors that influence adolescents to engage in health risk behaviors. The nurse must be familiar with Bandura's theory of Social learning where behavior is learned through modeling. The nurse must also be familiar with Martin Fishbein's theory of Reasoned Action in which behavior is described as a function of personal attitudes and social norms. These two theories may help to explain why adolescents engage in risky behaviors and give insight into developing appropriate programs designed to decrease risky behaviors practiced by adolescents today.

Implications for Future Research

Several methodological concerns of this study need to be addressed. Massive amounts of information were provided in using the self administered, 84-item, multiple choice YRBS. Related to the massive amounts of information, only 12 of the 84 questions covered on the survey were addressed for purposes of this study. Demographic variables of sex, age, and race were discussed briefly. This researcher recommends that further studies be conducted to assess the survey items not addressed in this study (the sociodemographic characteristics and the additional variables added to the original 84-item YRBS). Further research exploring relationships of variables between these two groups and other groups of adolescents is needed. The impact that these variables can have on the health of adolescents today and as they become adults in the future is

significant enough to warrant further research on this topic. Further studies on this topic could prove to be beneficial not only to adolescent students but to their parents, the entire community, and other health care providers as well.

Specific Recommendations for Future Research

Several ideas were noted that could be used to generate topics for future research.

The following are recommendations for future research:

1. Implement planned replication of this study at the same schools, using the same students when they are in the eleventh grade (this is part of the NIH grant study entitled “Empowering Rural Adolescents in Risk Reduction”) to determine significant differences in health risk behaviors reported in those who received an educational program through the use of peer instruction using photo novels (intervention school) and those receiving no instruction (control school).
2. Replicate this study at two other high schools in a different county in Kentucky to determine significant differences in health risk behaviors reported in that county compared to those reported for the two high schools in the Kentucky county studied.
3. Conduct a study to determine what health risk behaviors adolescents consider to be the most harmful to their health.
4. Conduct a study to determine what method of presentation concerning health risk behaviors would be well-received by adolescents.

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APPENDICES

1995

Youth Risk Behavior Survey

(This survey also includes 15 additional questions to assess farm safety practices and skin protection practices.)

This survey is about health behavior. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to develop better health education for young people like yourself.

DO NOT write your name on this survey. The answers you give will be kept private. No one will know what you write. Answer the questions based on what you really do.

Completing the survey is voluntary. Whether or not you answer the questions will not affect your grade in this class.

The questions that ask about your background will only be used to describe the types of students completing this survey. The information will not be used to find out your name. No names will ever be reported.

Make sure to answer every question. Circle your answers neatly (one answer for each question). When you are finished, follow the instructions of the person giving you the survey.

Thank You Very Much For Your Help.

2

The first 5 questions ask you about yourself.

1. How old are you?

- a. 12 years old or younger
- b. 13 years old
- c. 14 years old
- d. 15 years old
- e. 16 years old
- f. 17 years old
- g. 18 years old or older

2. What is your sex?

- a. Female
- b. Male

3. In what grade are you?

- a. 9th grade
- b. 10th grade
- c. 11th grade
- d. 12th grade
- e. Ungraded or other

4. How do you describe yourself?

- a. White - not Hispanic
- b. Black - not Hispanic
- c. Hispanic or Latino
- d. Asian or Pacific Islander
- e. American Indian or Alaskan Native
- f. Other

5. How do you describe yourself?

- a. Live on and work on a farm
- b. Live on a farm, but do not do any farm work
- c. Do not live on a farm, but do farm work for someone else
- d. Neither live on or work on a farm

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The next 7 questions ask about food you ate yesterday. Think about all meals and snacks you ate yesterday from the time you got up until you went to bed. Be sure to include food you ate at home, at school, at restaurants, or anywhere else.

6. Yesterday, how many times did you eat fruit?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
7. Yesterday, how many times did you drink fruit juice?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
8. Yesterday, how many times did you eat green salad?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
9. Yesterday, how many times did you eat cooked vegetables?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
10. Yesterday, how many times did you eat hamburger, hot dogs, or sausage?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
11. Yesterday, how many times did you eat french fries or potato chips?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times
12. Yesterday, how many times did you eat cookies, doughnuts, pie, or cake?
- a. 0 times
 - b. 1 time
 - c. 2 times
 - d. 3 or more times

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The next 8 questions ask about physical activity.

13. On how many of the past 7 days did you exercise or participate in sports activities for at least 20 minutes that made you sweat and breathe hard, such as basketball, jogging, swimming laps, tennis, fast bicycling, or similar aerobic activities?
- a. 0 days
 - b. 1 day
 - c. 2 days
 - d. 3 days
 - e. 4 days
 - f. 5 days
 - g. 6 days
 - h. 7 days
14. On how many of the past 7 days did you do stretching exercises, such as toe touching, knee bending, or leg stretching?
- a. 0 days
 - b. 1 day
 - c. 2 days
 - d. 3 days
 - e. 4 days
 - f. 5 days
 - g. 6 days
 - h. 7 days
15. On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?
- a. 0 days
 - b. 1 day
 - c. 2 days
 - d. 3 days
 - e. 4 days
 - f. 5 days
 - g. 6 days
 - h. 7 days
16. On how many of the past 7 days did you walk or bicycle for at least 30 minutes at a time? (Include walking or bicycling to or from school.)
- a. 0 days
 - b. 1 day
 - c. 2 days
 - d. 3 days
 - e. 4 days
 - f. 5 days
 - g. 6 days
 - h. 7 days

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17. In an average week when you are in school, on how many days do you go to physical education (PE) classes?

a. 0 days
b. 1 day
c. 2 days
d. 3 days
e. 4 days
f. 5 days

18. During an average physical education (PE) class, how many minutes do you spend actually exercising or playing sports?

a. I do not take PE
b. Less than 10 minutes
c. 10 to 20 minutes
d. 20 to 30 minutes
e. More than 30 minutes

19. During the past 12 months, on how many sports teams **run by your school**, did you play? (Do not include PE classes.)

a. 0 teams
b. 1 team
c. 2 teams
d. 3 or more teams

20. During the past 12 months, on how many sports teams **run by organizations outside of your school**, did you play?

a. 0 teams
b. 1 team
c. 2 teams
d. 3 or more teams

The next six questions ask about body weight.

21. How do you describe your weight?

a. Very underweight
b. Slightly underweight
c. About the right weight
d. Slightly overweight
e. Very overweight

22. Which of the following are you trying to do about your weight?

a. Lose weight
b. Gain weight
c. Stay the same weight
d. I am not trying to do anything about my weight

23. During the past 30 days, did you diet to lose weight or to keep from gaining weight?

a. Yes
b. No

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24. During the past 30 days, did you exercise to lose weight or to keep from gaining weight?
- a. Yes
 - b. No
25. During the past 30 days, did you vomit or take laxatives to lose weight or to keep from gaining weight?
- a. Yes
 - b. No
26. During the past 30 days, did you take diet pills to lose weight or to keep from gaining weight?
- a. Yes
 - b. No
- The next 17 questions ask about safety and violence.**
27. How often do you wear a seat belt when riding in a car driven by someone else?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Most of the time
 - e. Always
28. During the past 12 months, how many times did you ride a motorcycle?
- a. 0 times
 - b. 1 to 10 times
 - c. 11 to 20 times
 - d. 21 to 39 times
 - e. 40 or more times
29. When you rode a motorcycle during the past 12 months, how often did you wear a helmet?
- a. I did not ride a motorcycle during the past 12 months
 - b. Never wore a helmet
 - c. Rarely wore a helmet
 - d. Sometimes wore a helmet
 - e. Most of the time wore a helmet
 - f. Always wore a helmet
30. During the past 12 months, how many times did you ride a bicycle?
- a. 0 times
 - b. 1 to 10 times
 - c. 11 to 20 times
 - d. 21 to 39 times
 - e. 40 or more times

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31. When you rode a bicycle during the past 12 months, how often did you wear a helmet?
- a. I did not ride a bicycle during the past 12 months
 - b. Never wore a helmet
 - c. Rarely wore a helmet
 - d. Sometimes wore a helmet
 - e. Most of the time wore a helmet
 - f. Always wore a helmet
32. During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or more times
33. During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or more times
34. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?
- a. 0 days
 - b. 1 day
 - c. 2 or 3 days
 - d. 4 or 5 days
 - e. 6 or more days
35. During the past 30 days, on how many days did you carry a gun?
- a. 0 days
 - b. 1 day
 - c. 2 or 3 days
 - d. 4 or 5 days
 - e. 6 or more days
36. During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?
- a. 0 days
 - b. 1 day
 - c. 2 or 3 days
 - d. 4 or 5 days
 - e. 6 or more days

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37. During the past 30 days, how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?
- a. 0 days
 - b. 1 day
 - c. 2 or 3 days
 - d. 4 or 5 days
 - e. 6 or more days
38. During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or 7 times
 - f. 8 or 9 times
 - g. 10 or 11 times
 - h. 12 or more times
39. During the past 12 months, how many times has someone stolen or deliberately damaged your property such as your car, clothing, or books on school property?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or 7 times
 - f. 8 or 9 times
 - g. 10 or 11 times
 - h. 12 or more times
40. During the past 12 months, how many times were you in a physical fight?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or 7 times
 - f. 8 or 9 times
 - g. 10 or 11 times
 - h. 12 or more times

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41. During the past 12 months, how many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or more times
42. During the past 12 months, how many times were you in a physical fight on school property?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or 7 times
 - f. 8 or 9 times
 - g. 10 or 11 times
 - h. 12 or more times
43. The last time you were in a physical fight, with whom did you fight?
- a. I have never been in a physical fight
 - b. A total stranger
 - c. A friend or someone I know
 - d. A boyfriend, girlfriend, or date
 - e. A parent, brother, sister, or other family member
 - f. Someone not listed above
 - g. More than one of the persons listed above
- Sometimes people feel so depressed and hopeless about the future that they may consider attempting suicide, that is, taking some action to end their own life. The next 4 questions ask about attempted suicide.
44. During the past 12 months, did you ever seriously consider attempting suicide?
- a. Yes
 - b. No
45. During the past 12 months, did you make a plan about how you would attempt suicide?
- a. Yes
 - b. No

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46. During the past 12 months, how many times did you actually attempt suicide?
- a. 0 times
 - b. 1 time
 - c. 2 or 3 times
 - d. 4 or 5 times
 - e. 6 or more times
47. If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?
- a. I did not attempt suicide during the past 12 months
 - b. Yes
 - c. No
- The next 10 questions ask about tobacco use.
48. Have you ever tried cigarette smoking, even one or two puffs?
- a. Yes
 - b. No
49. How old were you when you smoked a whole cigarette for the first time?
- a. I have never smoked a whole cigarette
 - b. 8 years old or younger
 - c. 9 or 10 years old
 - d. 11 or 12 years old
 - e. 13 or 14 years old
 - f. 15 or 16 years old
 - g. 17 years old or older
50. During the past 30 days, on how many days did you smoke cigarettes?
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days

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51. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?
- a. I did not smoke cigarettes during the past 30 days
 - b. Less than 1 cigarette per day
 - c. 1 cigarette per day
 - d. 2 to 5 cigarettes per day
 - e. 6 to 10 cigarettes per day
 - f. 11 to 20 cigarettes per day
 - g. More than 20 cigarettes per day
52. During the past 30 days, how did you usually get your own cigarettes? (Select only one response.)
- a. I did not smoke cigarettes during the past 30 days
 - b. I bought them in a store such as a convenience store, super market, or gas station
 - c. I bought them from a vending machine
 - d. I gave someone else money to buy them for me
 - e. I borrowed them from someone else
 - f. I stole them
 - g. I got them some other way
53. When you bought cigarettes in a store during the past 30 days, were you ever asked to show proof of age?
- a. I did not smoke cigarettes during the past 30 days
 - b. I did not buy cigarettes in a store during the past 30 days
 - c. Yes, I was asked to show proof of age
 - d. No, I was not asked to show proof of age
54. During the past 30 days, on how many days did you smoke cigarettes on school property?
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days
55. Have you ever tried to quit smoking cigarettes?
- a. Yes
 - b. No

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56. During the past 30 days, on how many days did you use **chewing tobacco or snuff**, such as Redman, Levi Garrett, Beechnut, Skoal, Skoal Bandits, or Copenhagen?
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days
57. During the past 30 days, on how many days did you use **chewing tobacco or snuff on school property**?
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 5 days
 - d. 6 to 9 days
 - e. 10 to 19 days
 - f. 20 to 29 days
 - g. All 30 days
58. How old were you when you had your first drink of alcohol other than a few sips?
- a. I have never had a drink of alcohol other than a few sips
 - b. 8 years old or younger
 - c. 9 or 10 years old
 - d. 11 or 12 years old
 - e. 13 or 14 years old
 - f. 15 or 16 years old
 - g. 17 years old or older
59. During your life, on how many days have you had at least one drink of alcohol?
- a. 0 days
 - b. 1 or 2 days
 - c. 3 to 9 days
 - d. 10 to 19 days
 - e. 20 to 39 days
 - f. 40 to 99 days
 - g. 100 or more days

The next 5 questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes.

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60. During the past 30 days, on how many days did you have at least one drink of alcohol?

- a. 0 days
- b. 1 or 2 days
- c. 3 to 5 days
- d. 6 to 9 days
- e. 10 to 19 days
- f. 20 to 29 days
- g. All 30 days

61. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?

- a. 0 days
- b. 1 day
- c. 2 days
- d. 3 to 5 days
- e. 6 to 9 days
- f. 10 to 19 days
- g. 20 or more days

62. During the past 30 days, on how many days did you have at least one drink of alcohol on school property?

- a. 0 days
- b. 1 or 2 days
- c. 3 to 5 days
- d. 6 to 9 days
- e. 10 to 19 days
- f. 20 to 29 days
- g. All 30 days

The next 4 questions ask about marijuana use. Marijuana also is called grass or pot.

63. How old were you when you tried marijuana for the first time?

- a. I have never tried marijuana
- b. 8 years old or younger
- c. 9 or 10 years old
- d. 11 or 12 years old
- e. 13 or 14 years old
- f. 15 or 16 years old
- g. 17 years old or older

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64. During your life, how many times have you used marijuana?

- a. 0 times
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 to 19 times
- e. 20 to 39 times
- f. 40 to 99 times
- g. 100 or more times

65. During the past 30 days, how many times did you use marijuana?

- a. 0 times
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 to 19 times
- e. 20 to 39 times
- f. 40 or more times

66. During the past 30 days, how many times did you use marijuana on school property?

- a. 0 times
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 to 19 times
- e. 20 to 39 times
- f. 40 or more times

The next 9 questions ask about cocaine and other drug use.

67. How old were you when you tried any form of cocaine, including powder, crack, or freebase, for the first time.

- a. I have never tried cocaine
- b. 8 years old or younger
- c. 9 or 10 years old
- d. 11 or 12 years old
- e. 13 or 14 years old
- f. 15 or 16 years old
- g. 17 years old or older

68. During your life, how many times have you used any form of cocaine, including powder, crack, or freebase?

- a. 0 times
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 to 19 times
- e. 20 to 39 times
- f. 40 or more times

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69. During the past 30 days, how many times did you use **any** form of cocaine, including powder, crack, or freebase?
- a. 0 times
 - b. 1 or 2 times
 - c. 3 to 9 times
 - d. 10 to 19 times
 - e. 20 to 39 times
 - f. 40 or more times
70. During your life, how many times have you used the **crack or freebase** forms of cocaine?
- a. 0 times
 - b. 1 or 2 times
 - c. 3 to 9 times
 - d. 10 to 19 times
 - e. 20 to 39 times
 - f. 40 or more times
71. During your life, how many times have you sniffed glue, or breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high?
- a. 0 times
 - b. 1 or 2 times
 - c. 3 to 9 times
 - d. 10 to 19 times
 - e. 20 to 39 times
 - f. 40 or more times
72. During your life, how many times have you taken **steroid pills or shots** without a doctor's prescription?
- a. 0 times
 - b. 1 or 2 times
 - c. 3 to 9 times
 - d. 10 to 19 times
 - e. 20 to 39 times
 - f. 40 or more times
73. During your life, how many times have you used any other type of illegal drug, such as LSD, PCP, ecstasy, mushrooms, speed, ice, or heroin?
- a. 0 times
 - b. 1 or 2 times
 - c. 3 to 9 times
 - d. 10 to 19 times
 - e. 20 to 39 times
 - f. 40 or more times
74. During your life, how many times have you used a needle to inject any illegal drug into your body?
- a. 0 times
 - b. 1 time
 - c. 2 or more times

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75. During the past 12 months, has anyone offered, sold, or given you an illegal drug on school property?

- a. Yes
- b. No

The next 2 questions ask about AIDS education and information.

76. Have you ever been taught about AIDS or HIV infection in school?

- a. Yes
- b. No
- c. Not sure

77. Have you ever talked about AIDS or HIV infection with your parents or other adults in your family?

- a. Yes
- b. No
- c. Not sure

The next 8 questions ask about sexual behavior.

78. Have you ever had sexual intercourse?

- a. Yes
- b. No

79. How old were you when you had sexual intercourse for the first time?

- a. I have never had sexual intercourse
- b. 11 years old or younger
- c. 12 years old
- d. 13 years old
- e. 14 years old
- f. 15 years old
- g. 16 years old
- h. 17 years old or older

80. During your life, with how many people have you had sexual intercourse?

- a. I have never had sexual intercourse
- b. 1 person
- c. 2 people
- d. 3 people
- e. 4 people
- f. 5 people
- g. 6 or more people

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81. During the past 3 months, with how many people did you have sexual intercourse?
- a. I have never had sexual intercourse
 - b. I have had sexual intercourse, but not during the past 3 months
 - c. 1 person
 - d. 2 people
 - e. 3 people
 - f. 4 people
 - g. 5 people
 - h. 6 or more people
82. Did you drink alcohol or use drugs before you had sexual intercourse the last time?
- a. I have never had sexual intercourse
 - b. Yes
 - c. No
83. The last time you had sexual intercourse, did you or your partner use a condom?
- a. I have never had sexual intercourse
 - b. Yes
 - c. No
84. The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Select only one response.)
- a. I have never had sexual intercourse
 - b. No method was used to prevent pregnancy
 - c. Birth control pills
 - d. Condoms
 - e. Withdrawal
 - f. Some other method
 - g. Not sure
85. How many times have you been pregnant or gotten someone pregnant?
- a. 0 times
 - b. 1 time
 - c. 2 or more times
 - d. Not sure
- The next 8 questions ask about farm safety.
86. When you drove a tractor during the past 12 months, how often did you wear a seat belt?
- a. I did not drive a tractor during the past 12 months
 - b. Never wore a seatbelt
 - c. Rarely wore a seatbelt
 - d. Sometimes wore a seatbelt
 - e. Most of the time wore a seatbelt
 - f. Always wore a seatbelt

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87. When you drove a tractor during the past 12 months, did the tractor have a roll over protection structure (ROPS)?
- I did not drive a tractor during the past 12 months
 - The tractor was never equipped with ROPS
 - The tractor was rarely equipped with ROPS
 - The tractor was sometimes equipped with ROPS
 - The tractor was most of the time equipped with ROPS
 - The tractor was always equipped with ROPS
88. In the past 12 months, how often have you been an extra rider on a tractor?
- I was never an extra rider on a tractor in the past 12 months
 - Rarely was an extra rider on a tractor
 - Sometimes was an extra rider on a tractor
 - Often was an extra rider on a tractor
89. When you were exposed to loud noises and/or machinery (such as a lawn mower, string trimmer, tractor, bush hog, chain saw) during the past 12 months, did you wear ear plugs or commercial ear muffs?
- I was not exposed to loud noises and/or machinery during the past 12 months
 - Never wore ear plugs or commercial ear muffs
 - Rarely wore ear plugs or commercial ear muffs
 - Sometimes wore ear plugs or commercial ear muffs
 - Most of the time wore ear plugs or commercial ear muffs
 - Always wore ear plugs or commercial ear muffs
90. During the past 12 months, when you used machinery or tools (such as a lawn mower, string trimmer, chain saw, hammer or chisel) that might cause things to fly in your eyes, did you wear safety eye goggles or full face shields?
- I did not use machinery or tools that might cause things to fly in my eyes during the past 12 months
 - Never wore safety eye goggles or full face shields
 - Rarely wore safety eye goggles or full face shields
 - Sometimes wore safety eye goggles or full face shields
 - Most of the time wore safety eye goggles or full face shields
 - Always wore safety eye goggles or full face shields

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91. When you were exposed to harvest dusts and/or vapors from chemicals during the past 12 months, did you wear respiratory protective equipment (such as a respirator or face mask filter)?
- I was never exposed to harvest dusts and/or vapors from chemicals during the past 12 months
 - Never wore respiratory protective equipment
 - Rarely wore respiratory protective equipment
 - Sometimes wore respiratory protective equipment
 - Most of the time wore respiratory protective equipment
 - Always wore respiratory protective equipment
92. When handling or applying pesticides during the past 12 months, how often did you wear gloves?
- I did not handle pesticides during the past 12 months
 - Never wore gloves
 - Rarely wore gloves
 - Sometimes wore gloves
 - Most of the time wore gloves
 - Always wore gloves
93. When harvesting wet tobacco during the past 12 months, how often did you wear protective clothing (water-resistant clothing, boots, or rubber gloves)?
- I did not handle wet tobacco during the past 12 months
 - Never wore protective clothing
 - Rarely wore protective clothing
 - Sometimes wore protective clothing
 - Most of the time wore protective clothing
 - Always wore protective clothing
- The last 7 questions ask about skin protection.
94. When outdoors during the past 12 months, how often did you wear skin protection (long-sleeved clothing, wide-brim hat, or sun screen)?
- I was not outdoors during the past 12 months
 - Never wore skin protection
 - Rarely wore skin protection
 - Sometimes wore skin protection
 - Most of the time wore skin protection
 - Always wore skin protection

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95. During the past 12 months, how many times did you try to get a tan?
- 0 times
 - 1 to 5 times
 - 6 to 10 times
 - 11 to 16 times
 - 17 or more times
96. During the past 12 months, how many times have you gotten a sunburn that has peeled?
- 0 times
 - 1 time
 - 2 times
 - 3 or more times
97. During the past 12 months, how many times did you use a tanning bed?
- I never used a tanning bed during the past 12 months
 - 1 to 5 times
 - 6 to 10 times
 - 11 to 16 times
 - 17 or more times
98. During the past 12 months, what was the **greatest number of times a month** you used a tanning bed?
- I never used a tanning bed during the past 12 months
 - 1 time a month
 - 2 to 4 times a month
 - 5 to 6 times a month
 - 7 or more times a month
99. When using a tanning bed during the past 12 months, did you wear protective eye wear (such as goggles)?
- I did not use a tanning bed during the past 12 months
 - Never wore protective eye wear
 - Rarely wore protective eye wear
 - Sometimes wore protective eye wear
 - Often wore protective eye wear
 - Always wore protective eye wear
100. During the past 12 months, how many times have you checked your skin for any new growths, change in color of skin, or change in a mole or beauty mark (such as size, shape, color, or thickness)?
- 0 times
 - 1 time
 - 2 or 3 times
 - 4 or 5 times
 - 6 or more times

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STOP

Thank You Very Much For Your Help!!



Appendix B

HSRB APPROVAL ID 960906-01 (Jones)THIS FORM VALID 10/7/96 to 10/6/97

INFORMED CONSENT DOCUMENT

Project Title: **EMPOWERING RURAL ADOLESCENTS IN RISK REDUCTION**Investigator: M. Susan Jones, Department of Nursing, Western KY University
(502-745-3213)

Your child is being asked to participate in a project conducted through Western Kentucky University, The University of Kentucky and the Warren County Board of Education. Western KY University requires that you give your signed agreement for your child to participate in this project.

This letter explains to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. Mrs. Jones or one of the professional persons who work with her as study staff has explained this project in detail to your child at school. You are requested to call the investigator at 502-745-3213 to ask questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you and your child decide to participate in the project, you both should sign on the last page of this form and return the form with your child to his/her homeroom. A copy of the form will be sent to you to keep.

1.

Nature and Purpose of the Project: The purpose of the study is to evaluate the effectiveness of an educational tool, a photo novel developed by high school students, in reducing injuries and illnesses among teenagers. Photo novels are short picture books that use real people in realistic situations to teach about various issues. In this project, a group of students in the FFA (Future Farmers of America) chapter at one local high school will work with a nursing student at Western Kentucky University to develop 2 or 3 photo novels about health problems that are of interest to students at their school (as assessed by a survey and small group interviews at the start of the project). These photo novels will be used in student discussion groups led by FFA students to teach about health issues that the students themselves think are most important. In order to see if this project has any effect on improving the health of students by changing attitudes and/or behaviors, a second high school will be monitored, but will not participate in photo novel creation or teaching sessions.

2.

Explanation of Procedures: All 9th grade students from 2 Warren County High Schools will be asked to complete the YOUTH RISK BEHAVIOR SURVEY, a questionnaire that asks about their knowledge, attitudes, intentions and behavior toward various health problems that are faced by teenagers (i.e., intentional and unintentional injuries, tobacco use, alcohol and drug use, sexual behaviors, dietary behaviors, and physical activity). Additional questions to be added for this study include occupation-specific (especially agricultural) risks and injuries, sun exposure and noise exposure, which are more likely to be problems for this rural population. These same students will be asked to complete the survey again in the final third year of the project (when they are in 11th grade) to see if there is any change in their answers. In addition, 30 9th graders (15 from each school) will be randomly chosen to participate in a 90-minute group interview to discuss health issues, led by trained project staff. Those same 30 students (15 from each school) will be asked to participate in a second 90-minute group interview in the third year of the project (when they are in 11th grade).

3.

Discomfort and Risks: The study entails only the completion of a questionnaire in a classroom setting and, for a total of 30 students (15 from each school), a group interview led by trained project staff. As such, participation poses only minor risks to the student (possible anxiety and/or inconvenience). The student will not miss scheduled classes nor will the scores influence the student's grade.

4.

Benefits: The completion of the survey will provide needed information of the health risks which are of major concern to teenagers. This information is needed to assist other students to develop and then evaluate educational tools in the form of photo novel. If the educational method has merit, it could be used as an educational method for addressing other concerns of teenagers. In addition, students participating in the focus groups would be given the opportunity to examine health risks in more depth.

HSRB APPROVAL ID 960906-01 (Jones)

5. **Confidentiality:** All data will be kept confidential with no name appearing on any of the questionnaire responses. Names will be kept only for record-keeping purposes and will be kept separate from the data. All data and list of names will be kept in locked filing cabinets and no one but the research staff will have access to the files. Names of persons will not be referred to in reporting the results of this research project. Those students involved in the group interviews to discuss health issues and the creation of photo novels will be instructed that the information discussed in these sessions is to be held in confidence and is not for public discussion.
6. **Refusal/Withdrawal:** Refusal to participate in this study will have no effect on any future services you may be entitled to from the University nor from your child's school. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty. If for any reason the student no longer attends this school, the student will be automatically excluded from this study.

I understand also that it is not possible to identify all potential risks in an experimental procedure, and I believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.

I consent for my child, _____, to:
 ___ fill out the survey
 ___ and participate in the group interviews and creation of the photo novels (if selected as one of the 30 students in the first year and the third year)
 ___ neither fill out the survey or participate in the group interviews and creation of the photo novels.

 Signature of Parent/Guardian

 Date

INFORMED CONSENT DOCUMENT FOR RESEARCH INVOLVING MINORS
 (Note: This format is suggested by the HSRB)

CHILD/MINOR ASSENT FORM

I, _____ understand that my parents (mom and dad) have given permission (said it's okay) for me to take part in a project about identifying health concerns of teenagers by answering questions on a survey under the direction of Susan Jones, Department of Nursing, WKU.

I am taking part because I want to. I have been told that I can stop at any time I want to and nothing will happen to me if I want to stop.

 Signature

 Date

Appendix C

WESTERN KENTUCKY UNIVERSITY

Office of Sponsored Programs
104 Foundation Building
502-745-4652; Fax 502-745-4211
E-mail: Phillip.Myers@WKU.EDU

December 6, 1996

Melinda E. Hann
c/o Professor Susan Jones
Department of Nursing
Western Kentucky University

Dear Ms. Hann:


Your research topic "Health Risk Behaviors of rural Adolescents at Two high Schools in Warren County Kentucky," has undergone review by the Western Kentucky University IRB for human subjects of research. The IRB determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

In addition, the IRB found that: (1) informed consent will be sought and documented from each prospective subject; (2) provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data; and (3) that appropriate safeguards are included to protect the rights and welfare of the subjects. Please store all data securely at an on campus location for a minimum of three years.

Your research therefore meets the criteria of expedited review under the institutional human subjects protocol and is approved. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office Sponsored Programs at the above address.

Kindest regards.

Sincerely,



Phillip E. Myers, Ph.D.
HSRB Coordinator (for the HSRB)

Enclosure

c: Human Subjects File

Le.HannHSDeterm

VITA

Melinda E. Hann attended Barnes Hospital School of Nursing in St. Louis, Missouri, where she received a diploma in Nursing in January 1982. She attended Webster University in Webster Graves, Missouri, and graduated with a B. S. N. in May 1988. She is a candidate for the Master of Science degree in Nursing from Western Kentucky University, Bowling Green, Kentucky, and is scheduled to graduate December 1997.

Mrs. Hann was inducted into the Kappa Theta Chapter of Sigma Theta Tau at Western Kentucky University, Bowling Green, Kentucky, in November of 1996. She is a member of the Kentucky Nurses Association, the National Nursing Oncology Society, and the Bowling Green, Kentucky, chapter of the Nursing Oncology Society. Mrs. Hann has served as a Council member for the Barren River District Cancer Council since January of 1993.

Mrs. Hann has been employed as a staff nurse, assistant head nurse, and clinical trials nurse in a teaching university hospital. She worked as an inservice coordinator and a primary instructor of a 75-hour nurse aide course for a private nursing home. She was recently employed as a graduate assistant for a research project at Western Kentucky University, Bowling Green, Kentucky.